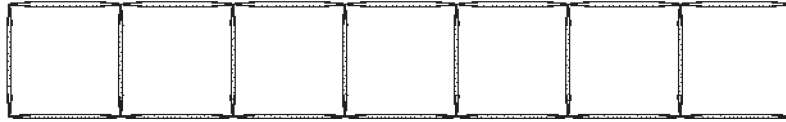# Missouri Assessment Program
Spring 2005

Mathematics

Anchor Pages for Released Items

Grade 10

6 Students were asked to make a row of squares using toothpicks. The diagram below shows the arrangement of toothpicks for the first 7 squares.

How many toothpicks will it take to make a row of 100 squares? In the space below, use words, numbers, or symbols to justify your answer and write your answer on the line.

4 - 1st square
3 - 99 squares

$99 \times 3 = 297$

$$+ \ 4$$
$$\overline{301}$$

_____301_____ toothpicks

227922082

6 Students were asked to make a row of squares using toothpicks. The diagram below shows the arrangement of toothpicks for the first 7 squares.
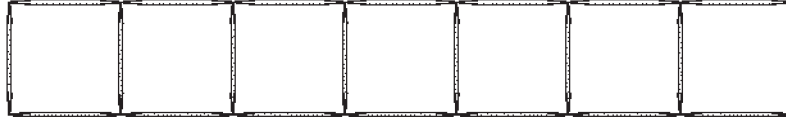
How many toothpicks will it take to make a row of 100 squares? In the space below, use words, numbers, or symbols to justify your answer and write your answer on the line.

1st Box: 4
Additional Box=3
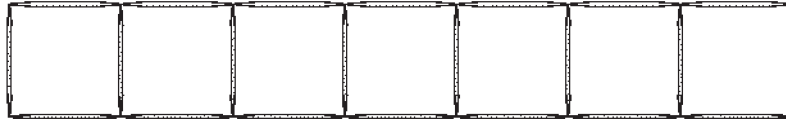
4 + 3(100) = number of toothpicks

304

_304_ toothpicks

227590165

6 Students were asked to make a row of squares using toothpicks. The diagram below shows the arrangement of toothpicks for the first 7 squares.

How many toothpicks will it take to make a row of 100 squares? In the space below, use words, numbers, or symbols to justify your answer and write your answer on the line.

22
9
31
×10
300
31
310

31 toothpicks for 10 squares

_310_ toothpicks

228265278

3 Dan called a tow truck company to tow his car. The company charges a fee of $22.00 plus $2.00 per mile for each mile towed. Write an equation that will allow Dan to calculate the total towing bill (*y*) when he knows the number of miles towed (*x*).

$$y = 2x + 22$$

If Dan's towing bill was $86.00, how many miles was his car towed?

$$86 = 2x + 22$$
$$-22 \qquad -22$$
$$64 = 2x$$
$$\frac{}{2} \quad \frac{}{2}$$
$$32 = x$$

32 miles

177007

3   Dan called a tow truck company to tow his car. The company charges a fee of $22.00 plus $2.00 per mile for each mile towed. Write an equation that will allow Dan to calculate the total towing bill (y) when he knows the number of miles towed (x).

$$y = 22.^{00} + 2.^{00}(x)$$

If Dan's towing bill was $86.00, how many miles was his car towed?

$$86.00 = 22.00 + 2.00(x)$$
$$-22.00 \quad -22.00$$
$$\overline{}$$
$$64.^{00} + 2.00(x)$$
$$-2.00 \quad -2.00$$
$$\overline{}$$
$$62.00 = x$$

375112

3 Dan called a tow truck company to tow his car. The company charges a fee of $22.00 plus $2.00 per mile for each mile towed. Write an equation that will allow Dan to calculate the total towing bill (*y*) when he knows the number of miles towed (*x*).

$$y = 22 + 2y$$

If Dan's towing bill was $86.00, how many miles was his car towed?

$$y = 22 + 2(86) = \$194$$

189869